

REMARKS

Claims 18 and 22 are pending in this application. Claims 1-17 and 19-21 are canceled. By this Amendment, Applicants have canceled claims 19 and 20 and amended claims 18 and 22 so that the claim language is consistent throughout the two claims. In addition, the subject matter of claim 19, now canceled, has been added to claim 18 as suggested by the Examiner (February 27, 2004, Office Action, page 3) and repetitious language has been removed from claim 22. No new matter has been added by the amendments.

I. Formal Matters

A. Claim Objections

The Examiner objected to claim 20 under 37 C.F.R. §1.75(c) for failing to further limit the subject matter of a previous claim. Applicants respectfully traverse the objection.

Although Applicants do not agree with the Examiner, Applicants have canceled claim 20 solely for the purpose of expediting prosecution. Thus, withdrawal of the objection is respectfully requested.

B. Rejections under 35 U.S.C. §112, first paragraph

The Examiner rejected claim 19 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse the rejection.

Although Applicants do not agree with the Examiner, Applicants have canceled claim 19 solely for the purpose of expediting prosecution. Thus, withdrawal of the rejection is respectfully requested.

C. Rejections under 35 U.S.C. §112, second paragraph

The Examiner rejected claim 19 under 35 U.S.C. §112, second paragraph, for indefiniteness. Applicants respectfully traverse the rejection.

Although Applicants do not agree with the Examiner, Applicants have canceled claim 19 solely for the purpose of expediting prosecution. Thus, withdrawal of the rejection is respectfully requested.

D. Rejections under 35 U.S.C. §103

1. The Examiner rejected claims 18-20 under 35 U.S.C. §103(a) as being unpatentable over (1) allegedly admitted prior art described in the specification on pages 1 and 2, in Figures 4A and 4B, and in the Amendment filed April 12, 2002, in view of (2) Elliott et al. (U.S. Patent No. 5,087,311) ("Elliott") and (3) any one of Colasanto (U.S. Patent No. 6,190,482) ("Colasanto"), Jarrell et al. (U.S. Patent No. 5,750,444) ("Jarrell"), Spielau et al. (U.S. Patent No. 3,850,725) ("Spielau"), or Wu (U.S. Patent No. 5,539,072) ("Wu").

Applicants respectfully traverse the rejection.

The Examiner stated that the allegedly admitted prior art teaches making a formed headliner containing a top cover member comprising a top cover and polyurethane foam, "wherein a film of hot melt adhesive is laminated on the backside of the top cover member," and a base member comprising a polyamide film, a polypropylene film, a flat, plate-like base material, and a non-woven fabric, "wherein a film of hot melt adhesive is laminated on the frontside of the base member" and has a thickness ranging from 15 to 100 µm (Office Action, pages 4-5). According to the Examiner, in the allegedly admitted prior art, the base member is softened by heat, which melts the adhesive thereon, such that the top cover member can bond to the base member. The Examiner further stated that heat from the base member causes the adhesive on the top cover member to melt facilitating the formation of the headliner via press forming.

The Examiner acknowledged that the allegedly admitted prior art does not disclose applying the adhesive layer to the top cover member in a pattern, which is a critical component of the invention. To make up for the deficiencies of the allegedly admitted prior

art, the Examiner cited Elliott apparently in combination with Colasanto, Jarrell, Spielau, or Wu. Although Elliott and each of Colasanto, Jarrell, and Spielau describe patterned adhesives, not one of the references remedies the deficiencies of the alleged prior art. Wu does not describe a patterned or non-patterned adhesive.

Claim 18

It is respectfully asserted that the Examiner has not taken the steps of the claimed method into consideration when applying the various references.

Claim 18 is directed to a method for manufacturing a formed headliner comprising:

- (1) laminating a hot melt adhesive in a pattern on a top cover member comprising a top cover and a foam layer, wherein the adhesive is laminated on the back of the foam layer;
- (2) laminating a hot melt adhesive film on a base member comprising a polyamide film, a polypropylene film, a base material, and a non-woven fabric, wherein the adhesive is laminated on the front of the polyamide film, which is above the polypropylene film and the base material;
- (3) heating the base member;
- (4) bonding the top cover member to the heated base member by melting the hot melt adhesive in the pattern using the heat from the heated base member; and
- (5) discharging air between the bonded top cover member and base member through the hot melt adhesive in the pattern, the foam layer, and the top cover member.

Prior Art

In the allegedly admitted prior art, it is known to apply a hot melt adhesive in a film on a base member comprising a polyamide film, a polypropylene film, a base material, and a non-woven fabric, wherein the adhesive is applied to the front of the polyamide film. It is further allegedly known that the base member can be heated, such that the base member

bonds to a top cover member comprising a top cover, a foam layer, and a nylon network under the foam layer (specification, pages 1 and 2, and Figures 4A and 4B).

It is not known in the allegedly admitted prior art to apply a hot melt adhesive to the foam layer in a pattern, nor it is known to discharge air through the patterned hot melt adhesive, foam layer, and top cover member after bonding *and not* through the base member, as claimed.

Elliott

Elliott discloses laminating gas-permeable fabric to a concave, gas-permeable substrate using an adhesive applied as a film or a web to the fabric, including a foam-backed fabric. The foam-backed fabric is placed in a pre-heated die containing the substrate (col. 5, lines 59-64). Superheated steam is ejected through the perforations in the male die to heat and melt the adhesive (col. 5, line 65, to col. 6, line 15). Air is then removed from the die *through the substrate via a vacuum* (col. 6, lines 7-10).

Elliott's method does not require two adhesives, particularly, two adhesives in connection, i.e., each adhesive coated on a separate surface and then combined. Elliott's method also does not involve at least laminating a hot melt adhesive film on the substrate, heating the substrate, bonding the substrate and the foam-backed fabric via heat from the substrate, and discharging air *through the foam-backed fabric*.

***Colasanto*¹**

Colasanto describes laminating a second air-permeable fabric or polymeric film to the surface of a first air-permeable fabric coated with an adhesive applied in a discontinuous pattern. The second air-permeable fabric or polymeric film is laminated onto the coated first

¹ Colasanto was filed July 29, 1999, and issued February 20, 2001. Applicants filed the '027 patent application October 25, 1999, and claim priority to a Japanese application filed May 31, 1999. Thus, Colasanto is not prior art, but a discussion of the patent is included herein for completeness in responding to the Office Action.

air-permeable fabric by nipping through rollers and by heat and/or pressure. Since the first fabric and the second fabric or polymeric film are both air-permeable, air can be discharged through either layer.

Colasanto's method has nothing to do with headliners, and does not require two adhesives, particularly, two adhesives in connection, i.e., each adhesive coated on a separate surface and then combined. Colasanto's method also does not involve at least laminating a hot melt adhesive in a pattern on the back of a foam layer, laminating a hot melt adhesive film on the second fabric or polymeric film, heating the second fabric or polymeric film, and bonding the second fabric or polymeric film to the first fabric via heat *from the second fabric or polymeric film.*

Jarrell

Jarrell describes laminating two porous materials, such as fabric on foam, using a patterned adhesive, whereby the resulting bonded laminate is breathable. The adhesive is dispensed from a slot die as a viscous hot melt adhesive and is coated onto the first porous material, which is then laminated to the second porous material while the adhesive is hot. Rollers may be used in the lamination of the second porous material.

Jarrell's method has nothing to do with headliners, and does not require two adhesives, particularly, two adhesives in connection, i.e., each adhesive coated on a separate surface and then combined. Jarrell's method also does not involve at least laminating a hot melt adhesive in a pattern on the back of a foam layer, laminating a hot melt adhesive film on the second material, heating the second material, and bonding the first material to the second material via heat *from the second material.* Jarrell notes that the laminates could be used in automobiles, but as cushions or fabrics, not as headliners.

Spielau

Spielau describes bonding two materials together using a patterned adhesive. The first material is coated with molten adhesive and allowed to cool. The coated first material is then subjected to pressure-free activation by infrared radiation for about 0.5 to 10 seconds and the second material is then bonded to the first material. The materials are shoe liners and shoe uppers.

Spielau's method has nothing to do with headliners, and does not require two adhesives, particularly, two adhesives in connection, i.e., each adhesive coated on a separate surface and then combined. Spielau's method also does not involve at least laminating a hot melt adhesive in a pattern on the back of a foam layer, laminating a hot melt adhesive film on the second material, heating the second material with a heater, and bonding the first material to the second material via heat *from the second material*.

Wu

Wu describes laminates containing fabric and a microporous polymeric substrate. The polymeric substrate contains a microemulsion of polymerized particles, which, when heated, melt and form a coating on the fabric surface. An adhesive in a discontinuous pattern may be used to laminate the fabric to the substrate.

Wu's method has nothing to do with headliners, and does not require two adhesives, particularly, two adhesives in connection, i.e., each adhesive coated on a separate surface and then combined. Wu's method also does not involve at least laminating a hot melt adhesive in a pattern on the back of a foam layer, laminating a hot melt adhesive film on the substrate, and bonding the fabric to the substrate via heat *from the substrate*.

Combination of Allegedly Admitted Prior Art and Elliott and Colasanto, Jarrell, Spielau, or Wu

According to the Examiner, the allegedly admitted prior art can be modified to include applying a patterned adhesive to the top cover member to allow air to pass through the foam layer. However, claim 18 requires, *inter alia*, (1) applying the patterned adhesive to a specific component of the top cover member, i.e., the foam layer; and (2) discharging air through the patterned adhesive, foam layer, and top cover after bonding *and inherently not through the base member* since the base member is not air-permeable (as acknowledged by the Examiner in the Advisory Action of October 15, 2003).

Regarding the first limitation, Colasanto applies a patterned adhesive to *a first fabric* such that a second fabric or film can adhere to the surface of the first fabric. Thus, the patterned adhesive is not applied to a foam layer. Spielau applies a patterned adhesive to a shoe liner or upper. Thus, the patterned adhesive is not applied to a foam layer. Wu applies a patterned adhesive to a fabric. Thus, the patterned adhesive is not applied to a foam layer.

Regarding the second limitation, Elliott, Colasanto, Jarrell, Spielau, and Wu each teach discharging air through the component corresponding to the non-air-permeable base member of the claimed method or, at least, allowing air to pass through the corresponding component.

Thus, the secondary and tertiary references do not remedy the defects of the allegedly admitted prior art and, in the absence of guidance, the skilled artisan would have no direction concerning how to successfully obtain the claimed invention by modifying the allegedly admitted prior art. Contrary to the Examiner's viewpoint, simply because a piece of prior art, by itself, allegedly teaches a patterned adhesive or a method of laminating two pieces of fabric does not render the claimed invention obvious. Since the likelihood of successfully obtaining the claimed invention by combining the references is extremely low especially in the absence of any indication concerning the appropriate direction in which to proceed, the art does not establish a *prima facie* basis for rejection under 35 U.S.C. §103(a).

In view of the amendments and arguments above, withdrawal of the rejection is respectfully requested.

2. The Examiner rejected claim 22 under 35 U.S.C. §103(a) as being unpatentable over (1) allegedly admitted prior art described in the specification on pages 1 and 2, in Figures 4A and 4B, and in the Amendment filed April 12, 2002, in view of (2) Elliott et al. (U.S. Patent No. 5,087,311) ("Elliott") and (3) any one of Colasanto (U.S. Patent No. 6,190,482) ("Colasanto"), Jarrell et al. (U.S. Patent No. 5,750,444) ("Jarrell"), Spielau et al. (U.S. Patent No. 3,850,725) ("Spielau"), or Wu (U.S. Patent No. 5,539,072) ("Wu"), as applied to claims 18-20 in the rejection above, and further in view of (4) Shimizu (U.S. Patent No. 5,695,865) ("Shimizu"). Applicants respectfully traverse the rejection.

The Examiner stated that the allegedly admitted prior art, Elliott, and any one of Colasanto, Jarrell, Spielau, or Wu disclose the steps of claim 22, except for the specific bonding/press forming steps, i.e., the components of claim 22. It is the Examiner's position that Shimizu makes up for the deficiencies of the primary, secondary, and tertiary references by teaching a forming process using a cold press.

Claim 22

Again, it is respectfully asserted that the Examiner has not taken the steps of the claimed method into consideration when applying the various references.

Claim 22 comprises all of the steps of claim 18 set forth above and further comprises:

- (1) placing the base member in base member clamps;
- (2) heating the base member to melt the hot melt adhesive film and to soften the base member;
- (3) transferring the heated and softened base member to a press forming machine;
- (4) placing the top cover member in top cover member clamps by sliding the top cover member to a material placing table by the patterned hot melt adhesive;

- (5) placing the clamped top cover member between the upper die and the lower die components of the press forming machine;
- (6) placing the clamped heated base member under the clamped top cover member;
- (7) putting the upper die and the lower die components together; and
- (8) performing cold press forming for 20 to 30 seconds;
- (9) such that the top cover member and the base member are bonded and formed into the three-dimensional product shape.

Prior Art and Cited References

The allegedly admitted prior art, Elliott, Colasanto, Jarrell, Spielau, and Wu are described above. As noted by the Examiner, neither the allegedly admitted prior art nor any of the five cited patents teaches the additional specific steps of claim 22.

Shimizu

Shimizu teaches various methods of forming automobile upholstery components, such as a door trim main body containing an ornamental sheet (fabric layer on a foam layer), a surface skin member (PVC layer laminated to a foam layer) and a core member (polypropylene). In one method, the core member is created using a hot press forming machine containing a molding of a wood fiber mat impregnated with a thermosetting resin (col. 6, lines 55-64). The core member formation requires heat and a molding time of 50 seconds (col. 6, lines 64-67). Following the core member formation, a bonding agent is applied to the core member and the surface skin member is attached to the top of the core member by vacuum bonding using the die assembly (col. 7, lines 1-15). Air is removed from between the surface skin member and core member via the vacuum suction holes in the female die component, and thus air is removed through the core member (col. 7, lines 16-24).

The ornamental sheet is attached to the surface skin member by high frequency welding to avoid the use of a bonding agent (col. 6, lines 47-50).

In a second method, described at column 7, line 61, to column 8, line 29, the core member is created using heat to soften the wood fiber mat impregnated with the thermosetting resin. Following the initial core member formation, the surface skin member is attached to the top of the core member by thermal molding using a cold press molding process and a die assembly. Simultaneously, the core member is molded into a prescribed shape. A bonding agent is not used when cold press molding is used. The ornamental sheet is then attached to the surface skin member using the cold press molding process by high frequency welding for a press time of 7 seconds. This process causes the surface skin member to melt over the ornamental sheet, thereby affixing the ornamental sheet to the surface skin member by infiltrating small gaps inside the foam layer of the ornamental sheet. This process also avoids the use of a bonding agent.

Combination of Allegedly Admitted Prior Art and Elliott and Colasanto, Jarrell, Spielau, or Wu and Shimizu

First, according to the Examiner, the allegedly admitted prior art intrinsically discloses cold press forming in general. However, the Examiner has not provided any support for this assertion and, regardless, claim 22 requires specific steps, not cold press forming in general.

Second, according to the Examiner, Elliott, Colasanto, Jarrell, Spielau, and Wu can be modified to include cold press forming in view of Shimizu. As noted above, Elliott, Colasanto, Jarrell, Spielau, and Wu do not remedy the defects of the allegedly admitted prior art, and thus do not meet the claim limitations of claim 22 that encompass the claim limitations of claim 18 for the reasons set forth above.

In addition, Elliott, Colasanto, Jarrell, Spielau, and Wu all require a specific formation mechanism, including heat. For example, Elliott discloses injecting superheated steam,

Colasanto discloses using a nipping/roller device, Jarrell discloses heating the adhesive and ejecting it through a slot die, Spielau discloses using infrared radiation, and Wu discloses heating polymerized particles and makes a general statement regarding heat/pressure in the lamination process. Not one of the methods disclosed in these five patents could be modified by cold press forming without destroying the disclosed methods and resulting products. When asserting that claims are obvious over a combination of references, the Examiner cannot modify a reference such that the modification renders the reference process or product unsatisfactory for its intended purpose. In this case, the Examiner has made such a modification.

Moreover, claim 22 requires, *inter alia*, (1) placing the top cover member in top cover member clamps *by sliding the top cover member to a material placing table by the patterned hot melt adhesive*; and (2) performing cold press forming for 20 to 30 seconds. Since the five patents cited against claim 18 do not teach the limitations of claim 22, they do not teach these two limitations. In addition, Shimizu's methods do not involve at least these two steps. Shimizu does not teach the placement of a top cover member by sliding and only teaches cold press forming for about 7 seconds when the ornamental sheet is applied. There is no suggestion to place the top cover member by sliding as claimed nor to extend the cold press forming time to 20 to 30 seconds. The Examiner stated that Elliott discloses a conventional press time of 45 to 60 seconds. However, Elliott does not appear to be describing cold press molding at the citation provided by the Examiner (col. 6, lines 15-16) and Applicants' press time is 20 to 30 seconds, not 45 to 60 seconds.

The allegedly admitted prior art is relied upon for headliner formation in general, Elliott, Colasanto, Jarrell, Spielau, and Wu are relied upon for their disclosure of a patterned adhesive, and Shimizu is relied upon for its disclosure of cold press forming. The Examiner

cannot reconstruct the invention by picking and choosing isolated teachings from the prior art and then placing the selected teachings together. The teachings must be considered as whole.

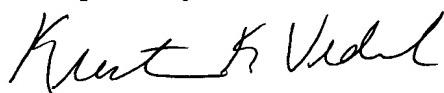
In view of the amendments and arguments above, withdrawal of the rejection is respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 18 and 22 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



William P. Berridge
Registration No. 30,024

Kristin K. Vidovich
Registration No. 41,448

WPB:KKV/amw

Date: May 27, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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